

US009409542B2

(12) United States Patent

Fujiwara

(54) VEHICLE SIDE AIRBAG DEVICE AND MANUFACTURING METHOD OF SIDE AIRBAG

(71) Applicant: TOYOTA JIDOSHA KABUSHIKI

KAISHA, Toyota-shi, Aichi-ken (JP)

(72) Inventor: Yusuke Fujiwara, Toyota (JP)

(73) Assignee: TOYOTA JIDOSHA KABUSHIKI

KAISHA, Toyota (JP)

(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 0 days.

(21) Appl. No.: 14/884,002

(22) Filed: Oct. 15, 2015

(65) Prior Publication Data

US 2016/0114757 A1 Apr. 28, 2016

(30) Foreign Application Priority Data

Oct. 27, 2014 (JP) 2014-218639

(51) Int. Cl. **R60R** 2

B60R 21/207 (2006.01) **B60R 21/233** (2006.01)

B60R 21/231 (2011.01) **B60R 21/2338** (2011.01)

B60R 21/235 (2006.01) **D05B 1/04** (2006.01)

(Continued)

(52) U.S. Cl.

(10) **Patent No.:**

US 9,409,542 B2

(45) **Date of Patent:**

Aug. 9, 2016

(58) Field of Classification Search

CPC B60R 21/23138; B60R 21/235; B60R 21/233; B60R 21/207; B60R 21/2338; B60R 2021/23324; B60R 2021/23382; B60R 2021/23576; B60R 2021/23146; D05B 1/26; D05B 1/04; D05B 13/00

See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

8,757,657 B1	* 6/2014	Hotta	B60R 21/233
8,915,519 B2	* 12/2014	Hotta	280/730.2 B60R 21/2346 280/729

(Continued)

FOREIGN PATENT DOCUMENTS

CA 2886916 A1 4/2015 JP 2012-025182 A 2/2012

(Continued)

Primary Examiner — Drew Brown (74) Attorney, Agent, or Firm — Oliff PLC

(57) ABSTRACT

The present disclosure provides a vehicle side airbag device including: a side airbag, housed inside a side support section of a vehicle seat, that inflates and deploys toward a vehicle front side upon being supplied with gas from an inflator, the side airbag including: a bag body that is formed in a bag shape; a front-rear left-right partitioning cloth that partitions the bag body into a front bag section and a rear bag section, and that partitions the rear bag section into a left and a right chamber in a row along a vehicle width direction in an inflated and deployed state of the bag body; and a tether, provided at at least one chamber of the left or the right chamber, that bears tension in the inflated and deployed state, and that restricts inflation of the at least one chamber toward the vehicle front side.

15 Claims, 19 Drawing Sheets



